

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2004/008464

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/31 C07K14/285 A61K39/102 G01N33/569

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/10459 A (AQUA HEALTH EUROP LTD ; BARNES ANDREW CARTNER (GB)) 15 February 2001 (2001-02-15) cited in the application page 1, line 3 - line 8	1,2, 5-10,14, 15, 17-19,23
Y	page 4, line 7 - page 7, line 35 page 16, line 7 - page 17, line 24; figures 3,7	3,4, 11-13, 16, 20-22, 24,25
Y	EP 0 773 295 A (OTTAWA CIVIC HOSPITAL) 14 May 1997 (1997-05-14) page 3, line 45 - page 6, line 51 ----- -/-	3,4, 11-13, 24,25

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the International filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the International filing date but later than the priority date claimed

- "T" later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the International search

16 September 2005

Date of mailing of the International search report

29.09.05

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 96/12734 A (BARNES ANDREW CARTNER ; EWOS AB (SE)) 2 May 1996 (1996-05-02) page 2, line 20 - page 9, line 10; claims 1,4,5,9,17,20	15, 17-21,23
X	MAGARINOS B ET AL: "Vaccination trials on gilthead seabream (<i>Sparus aurata</i>) against <i>Pasteurella piscicida</i> " AQUACULTURE, vol. 120, no. 3-4, 1994, pages 201-208, XP009053870 ISSN: 0044-8486 the whole document	15, 17-21,23
X	BAKOPOULOS V ET AL: "VACCINATION TRIALS OF SEA BASS, <i>DICENTRARCHUS LABRAX</i> (L.), AGAINST <i>PHOTOBACTERIUM DAMSELA</i> SUBSP. <i>PISCICIDA</i> , USING NOVEL VACCINE MIXTURES" JOURNAL OF FISH DISEASES, OXFORD, GB, vol. 26, no. 2, February 2003 (2003-02), pages 77-90, XP001204575 the whole document	15, 17-19,23
Y		16,20-22
X	MAGARINOS B ET AL: "INFLUENCE OF FISH SIZE AND VACCINE FORMULATION ON THE PROTECTION OF GILTHEAD SEABREAM AGAINST <i>PASTEURELLA PISCICIDA</i> " BULLETIN OF THE EUROPEAN ASSOCIATION OF FISH PATHOLOGISTS, vol. 14, no. 4, 1994, pages 120-122, XP001207088 the whole document	18-20,23
Y	MAZZOLINI E ET AL: "PATHOGENIC VARIABILITY OF <i>PASTEURELLA PISCICIDA</i> DURING IN VITRO CULTIVATION AS A PRELIMINARY STUDY FOR VACCINE PRODUCTION" JOURNAL OF APPLIED ICHTHYOLOGY - ZEITSCHRIFT FÜR ANGEWANDTE ICHTHYOLOGIE, BLACKWELL , BERLIN, DE, vol. 14, no. 3/4, December 1998 (1998-12), pages 265-268, XP009042451 ISSN: 0175-8659 the whole document	16,22

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>ROMALDE J L ET AL: "Immunization with bacterial antigens: Pasteurellosis" DEVELOPMENTS IN BIOLOGICAL STANDARDIZATION; FISH VACCINOLOGY S. KARGER AG, P.O. BOX, ALLSCHWILERSTRASSE 10, CH-4009 BASEL, SWITZERLAND; S. KARGER AG, NEW YORK, NEW YORK, USA SERIES : DEVELOPMENTS IN BIOLOGICAL STANDARDIZATION (ISSN 0301-5149), 1997, pages 167-177, XP009042445 & MEETING; OSLO, NORWAY; JUNE 5-7, 1996 ISSN: 3-8055-6482-1 the whole document</p> <p>-----</p>	
A	<p>MAGARINOS B ET AL: "PATHOGENIC ACTIVITIES OF LIVE CELLS AND EXTRACELLULAR PRODUCTS OF THE FISH PATHOGEN PASTEURELLA PISCICIDA" JOURNAL OF GENERAL MICROBIOLOGY, SOCIETY FOR MICROBIOLOGY, READING, GB, vol. 138, no. PART 12, 1992, pages 2491-2498, XP001204741 ISSN: 0022-1287 the whole document</p> <p>-----</p>	

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of Item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-14,24,25

Claims 1-14,24 and 25 refer to an isolated or purified 55 kDa extracellular protein of *Photobacterium damsela* subsp. *piscicida* having apoptogenic properties, its amino acid sequence, the nucleic acid sequence encoding the same, DNA expression vector comprising said nucleic acid sequence, a vaccine comprising either an immunogenic derivative of said protein or the above DNA expression vector, antibodies raised against said protein, and the use of either the amino acid sequence or the nucleic acid sequence of the protein for the manufacture of a test for diagnosis of infection with *Photobacterium damsela* subsp. *piscicida* or of pasteurellosis in fish.

2. claims: 15-23

Claims 15-23 refer to a general method of preparing a vaccine against pasteurellosis comprising a step of growing *Photobacterium damsela* subsp. *piscicida* cells in culture; further the claims refer to a vaccine composition comprising an inactivated cell culture supernatant or extracellular protein preparation rich in p55 from *Photobacterium damsela* subsp. *piscicida*.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0110459	A	15-02-2001	AU 6304000 A EP 1200121 A2 JP 2003506412 T	05-03-2001 02-05-2002 18-02-2003
EP 0773295	A	14-05-1997	CA 2189831 A1 JP 9285291 A NO 964713 A US 6180614 B1 US 5780448 A	08-05-1997 04-11-1997 09-05-1997 30-01-2001 14-07-1998
WO 9612734	A	02-05-1996	AU 3821095 A	15-05-1996